

REVIEWS.

REPORT ON CHOLERA IN EUROPE AND INDIA. By EDWARD O. SHAKESPEARE, A.M., M.D., Ph.D., United States Commissioner. Washington: Government Printing Office, 1890.

IN the selection of a Government representative, political expediency is usually the guiding consideration, and the same is unfortunately true in the smaller sphere of medical politics. Nevertheless, the right man now and then obtains the right place, either because his abilities are so conspicuous as to make detraction ridiculous and opposition futile, or from the force of circumstances apparently fortuitous.

There was nothing fortuitous in Dr. Shakespeare's appointment "as a representative of the Government of the United States, to proceed under the direction of the Secretary of State, to Spain and such other countries of Europe where the cholera exists, and make investigation of the causes, progress, and proper prevention and cure of the said disease." . . . Before bacteriology was regarded as a science, his reputation as a pathologist was thoroughly established, and he was among the first to recognize the fundamental relations of microorganisms to disease, and to familiarize himself with the technique of their study. He carried with him on his mission the confidence of the entire profession, and that it was not misplaced is proved by the Report now before us.

The book is a storehouse of information on all relating to cholera, and will always be consulted as a standard authority by the hygienist, the statistician, the bacteriologist, and the medical practitioner.

The author's method of arranging and classifying the details of his vast subject is an admirable one. He begins by studying the course of the cholera epidemic immediately preceding the one which he personally investigated, describes its introduction into Egypt, and its prevalence throughout that country in 1883, and treats in detail of the sanitary conditions there prevailing. He next traces the disease to France, Italy, Spain, and other European countries, and finally, to the port of New York, which it reached on September 23, 1887. In the numerous sections of this chapter of 370 pages, elaborate details are given of the sanitary conditions of the towns in which the epidemic was rife.

Chapter II. deals with the topography and demography of British East India in relation to cholera, and is, from the vitally important standpoint of prophylaxis, the most important part of the Report. It contains a most emphatic denunciation of the criminal negligence which permits the periodic migration of cholera, in company with the Mohammedan pilgrims to Mecca, from the port of Bombay.

India is universally acknowledged to be the home of cholera, and after reading Dr. Shakespeare's description of the filthy habits of the Hindoos, it is easily understood why this is the case. Until this immense focus of

infection is sterilized it is a constant menace to the world, the various governments of which have the right to demand what measures to accomplish this end are being carried out by the Government of India. According to Dr. Shakespeare, they are absolutely futile; they can, he says, "never accomplish it, so long as the present customs of caste and modes of life of the inhabitants prevail." In fact, according to this Report, the Government of India is inclined to repress too zealous efforts at sanitary reform, as is evidenced by the fact that Dr. Simpson, the health officer of Calcutta, was publicly reprimanded for pointing out the "filthy sanitary condition of the native population of Calcutta, and the urgent necessity for prompt and radical reforms."

Chapter III, which is entitled "Bacteriological Investigations and Literature," is a compilation of the principal literature concerning the comma bacillus, and contains papers by Koch, Klein and Gibbes, Cheyne, Nicoti and Rietsch, Klebs and Ceci, Ferrán, and many others. The Stillé of the next generation, if it produces one, will find here, ready to his hand, all the materials for continuing the history of cholera.

Chapter IV. treats of the etiology of cholera and its differential diagnosis from malaria, and contains the author's personal observations concerning the etiology of Asiatic cholera. The result of the latter has forced him to admit that the "claim made by Koch must be regarded as established, namely, that the presence of his comma bacillus in the alvine evacuations, or the intestinal contents, or vomit of an individual suffering with a suspicious attack, furnishes a ready, safe, and absolutely reliable means of diagnosis of Asiatic cholera."

The importance of the discovery of an organism peculiar to cholera is incalculable, for, as pointed out in connection with the introduction of cholera into France and Spain, valuable time has been wasted in the beginning of all epidemics in discussing the nature of the disease.

This chapter contains a digression from the subject of cholera which, on superficial examination, seems unwarranted. I refer to the section on malaria, with its beautiful illustrations of the *hematozoön malarie* in its various transformations. When, however, it is ascertained by more careful reading that the sanitary commissioner of the port of Bombay—the port from which cholera accompanies the Mohammedan pilgrims to Mecca—has pronounced cholera to be only a pernicious form of malaria, and neither transportable nor contagious, it becomes evident that he and others in India holding such views should be instructed in the means of distinguishing between cholera and the malarial fevers.

The question of immunity is discussed in Chapter V., and forms an appropriate introduction to preventive inoculation, which is the subject of Chapter VI. Griesinger, Colin, Proust, Koch, and others, are quoted in favor of the view that one attack of Asiatic cholera confers at least a short immunity from subsequent attacks. While in Spain, Dr. Shakespeare prepared a circular letter containing twenty-five questions concerning the etiology, nature, and prophylaxis of cholera, one of which requested the physician to state whether he was acquainted with instances of second or third attacks of cholera during the same epidemic. This circular was sent to about twenty-five hundred physicians residing in the cities, towns, and villages which had suffered from the epidemic. Among the "large number" of replies (the number is not mentioned) there were only eight in which a second attack was reported, and "from an examination of the details of these there was no doubt left in our mind that six

were not second genuine attacks after a complete recovery, but were in reality relapses due to imprudences of diet or otherwise, before convalescence and complete recovery had been established."

The fact of immunity being conferred by an attack of cholera is, however, better supported by a number of charts which show the periodic recurrence of cholera epidemics. This periodicity is especially marked outside of the regions where cholera is endemic, viz., in Bengal and Assam. The periodical recurrences of cholera in India bear a striking resemblance to those of smallpox, of which graphic charts are also given, "the immunity seeming to be more or less positive for from two to five years."

Chapter V. is partly devoted to a defence of Dr. Jaime Ferrán, of Tortosa, and an investigation of his method of preventive inoculation. Dr. Shakespeare, like many others, had been prejudiced against Dr. Ferrán by publications in the medical and secular press, and had besides been told by those whose opinions in other matters he valued, that the Ferrán question was unworthy of serious consideration. It was this very abuse of the man which decided Dr. Shakespeare to visit him in his own home and investigate his methods, and there is no incident in the course of his extensive travels which so thoroughly exhibits the manly spirit in which the work of our Commissioner was performed. The account of the interview with Ferrán is most interesting; suffice it to say that Dr. Shakespeare left Tortosa "with a very different opinion concerning the character and accomplishments of Dr. Ferrán" than he had entertained before making his visit to that city.

The claims of Ferrán are thoroughly investigated and, it is needless to say, with characteristic impartiality. The result is "the belief that subcutaneous inoculations into man of pure liquid cultures of the comma bacillus of Koch, whilst they do not usually excite disturbances which in any way resemble Asiatic cholera, apparently exercise a certain protective influence through the establishment of a considerable degree of immunity from attack and death by cholera."

Chapter VII. deals with measures of prevention, general and individual, and contains an elaborate argument in favor of national control of maritime quarantine.

The last chapter of this colossal work deals with the etiology, pathology, symptomatology, prognosis, and treatment of cholera, and has for the most part already appeared in Keating's *Cyclopædia of the Diseases of Children*. It contains in a few pages those facts concerning the disease which are of the greatest interest to the practitioner.

The above remarks may serve to convey an idea of the nature of this Report, the value of which depends, not so much upon its stupendous array of facts as upon their judicious selection and arrangement, and the critical remarks by which they are accompanied.

The unflinching zeal displayed by Dr. Shakespeare in the prosecution of this research is worthy of the highest commendation. No considerations of personal convenience or safety seem to have entered his mind. For example, he spent the summer months in India, and during one of them was prostrated by illness, and, as is well known to the physicians of Philadelphia, he returned to that city with health so shattered that it was many months before he could begin the arduous work of his Report. The delay in its publication was keenly felt, but solely because all were anxious to see what all knew would be a masterpiece.

F. P. H.

CLINIQUE DES MALADIES DU SYSTÈME NERVEUX—M. LE PROFESSEUR CHARCOT. Leçons du Professeur, Mémoires, Notes et Observations, pendant les années 1889-90 et 1890-91, et publiés sous la direction de Georges Guinon, Chef de Clinique. Tome I. Paris, 1892.

CLINICAL LECTURES ON DISEASES OF THE NERVOUS SYSTEM. By PROFESSOR CHARCOT, etc. Paris, 1892.

THE appearance of a new book from Charcot's clinic is a conspicuous event. From no other source does the medical world expect so much and such perfect and attractive clinical work in the field that the author has made his own; and it is rarely disappointed. This volume is a collection of Charcot's more important lectures, delivered during the last two years, and of notes and observations by his assistants and students at the Salpêtrière. It is a notable book. It contains much that is new; and some that is even not entirely new gains a freshness and vigor, and acquires an individuality and importance, that Charcot knows well how to impart. In his preface he says that such a collection may be useful to those who are interested in the facts of neuro-pathology. But it is more than useful—it is indispensable. It will be received with satisfaction as a continuation of the author's great treatise on *Diseases of the Nervous System*; and the periodical appearance in the future of similar volumes, pioneers doubtless in a progressive neurology, will be of the first importance.

The book contains too much to be noticed here in detail. We shall select only the more important subjects.

Morvan's disease is discussed at length. First described in 1883 by Morvan, of Lannilis, who called it "analgesic paralysis of the upper limbs, with whitlow," its autonomy is still disputed by some. Charcot distinguishes it from scleroderma of the finger, from anæsthetic leprosy, and from Reynaud's disease. It has three predominant symptoms: (1) Pain. (2) Paralysis with analgesia of one side, then of the other. (3) Whitlows. The paralysis and anæsthesia sometimes precede the pain. Other trophic disorders may appear. The "dissociation symptom" of syringomyelia, i. e., the preservation of tactile sensation with abolition of the pain and temperature senses, is not observed—at least Morvan claimed that it was not observed, and this is considered by some to distinguish the disease from gliomatosis of the cord, or syringomyelia. The whitlow begins like a common felon, with redness, heat, and swelling, but it is always a grave complication, destroying the distal phalanges and sometimes even those next. Occasionally a scoliosis of the spine is observed. The duration of the disease is long, its prognosis is grave, and its etiology is almost unknown. Morvan believed that its seat is in the cord at the origin of the brachial nerves. The first autopsy showed no cavities in the cord, but only a sclerosis. In a later lecture, however, Charcot reviews the subject again, and concludes that Morvan's disease is only a special type of syringomyelia.¹

Hysterical tremors are described in an elaborate essay. They are classified, as is the French mode, and presented in groups. This makes

¹ Vide Leçon No. XII., "Sur un cas de Syringomyélie avec Panaris analgésiques—type Morvan" (p. 243).

the study of them easy and attractive, but does not avoid the suspicion that perhaps they are not so nicely differentiated in nature. It is remarkable, as Charcot says, that this part of the symptomatology of hysteria has been so much neglected. Even the work of Briquet, so complete in other respects, has but an allusion to tremor. To Rendu and a few other recent French writers all the credit is given of "opening a new era" by describing the various types of this symptom. As is too common among his countrymen, Charcot does scant justice here to American writers. Mitchell, years ago, although he abstained from classification, discussed the tremor of hysteria in his well-known monograph. Charcot contends that hysteria simulates all the tremors of organic origin, and, accordingly, divides the hysterical tremors into groups simulating the tremor respectively of paralysis agitans, exophthalmic goitre, alcoholic and general paralysis, disseminated sclerosis, and mercurial poisoning. The association of the tremor, of whatever type, with hysterical stigmata; the relation of trauma to hysterical tremor; the possible identity of this tremor and that of mercurial poisoning, are among the important subjects discussed and elucidated.

Migraine appears to be one of the most varied of nervous diseases. Charcot adds to our knowledge of it, the description of a type of rare interest. He calls it *migraine ophthalmoplégique*. This form of migraine is accompanied by a paralysis of the oculo-motor nerve, involving the branches to both the exterior and interior muscles of the eye. Therefore the syndrome is an almost complete ophthalmoplegia, externa and interna, involving the iris and ciliary muscle as well as the muscles of the eyeball supplied by the third nerve. The fourth and sixth nerves apparently escape. This ophthalmoplegia follows a paroxysm of pain and vomiting, identical with that of the classical migraine. The eye may be congested; ophthalmoscopic examination gives negative results. The author makes valuable historical notes and references.

Charcot reports, and studies carefully, two cases of muscular atrophy associated with ophthalmoplegia externa. This combination is exceedingly rare, and depends upon degeneration of the nuclei, in the mid-brain, of the motor nerves to the orbit, identical and synchronous with the degeneration of the motor nuclei in the anterior horns in the cord. This syndrome, ophthalmoplegia externa, or nuclear ophthalmoplegia, interests the general clinician more directly even than the ophthalmologists, who almost exclusively have studied it. Hutchinson first described it fully and gave it the present name, which ought to be slightly changed, as Mauthner suggests, so as to be read "exterior" rather than "externa." It means, of course, a paralysis *not* of the extensor muscle only, but of all the exterior muscles of the eye, as well as of the elevator of the upper lid, as distinguished from the interior muscles—the iris and the ciliary muscle—which escape. Several disease-processes may cause this complexus of symptoms. Tumor of the mid-brain is one, although in our observation this is likely to involve the nerves to the iris and the ciliary muscle. Certain acute inflammatory or destructive processes, as alcoholism and diphtheria, may cause complete or partial ophthalmoplegia, as Wernicke and others have shown. It may appear with locomotor ataxia and general paresis. Finally, as Charcot shows in his present lecture, ophthalmoplegia externa may be combined with a more or less general muscular atrophy, either subacute, or slow and progressive. He suggests that this impairment of the mid-brain be

called superior bulbar paralysis, in contradistinction to the commonly observed, or *inferior*, bulbar paralysis. From both the historical and clinical standpoints this lecture is very full and instructive.

In another lecture Charcot discusses the relation of diabetes to diseases of the nervous system, and describes especially diabetic paraplegia. This is apparently a peripheral neuritis, very similar to the pseudo-tubes caused by alcohol and lead. It is marked by fulgurant pains, dysæsthesie, abolition of the knee-jerks, swaying, and an altered gait. The author protests that this gait, in both diabetic and alcoholic paraplegia, should not be called *ataxie*. It is a true *démarche de stepper*, not an ataxia, and is caused by paralysis of the extensor muscles and consequent falling of the foot. Hence the patient has a high-stepping gait. Charcot, as usual, makes interesting historical observations, and calls attention to the fact that whereas originally, owing to the brilliant experiments of Bernard, diabetes was believed to be caused always by a lesion of the floor of the fourth ventricle, hence to be primarily a nerve-lesion, it is in comparatively recent days that the importance of nerve-lesions secondary to diabetes has been recognized.

We have reviewed this valuable book at sufficient length. Many other subjects, equally attractive and suggestive, are presented in a series of lectures each of which is a monograph. These products of this noted contemporary clinic, presented with the literary skill of a master, need no commendation nor even this brief introduction to studious readers, who will appreciate them well. J. H. L.

DISEASES OF THE EYE. A HANDBOOK OF OPHTHALMIC PRACTICE FOR STUDENTS AND PRACTITIONERS. By G. E. DE SCHWEINITZ, M.D., Professor of Diseases of the Eye and Ear in the Philadelphia Polyclinic; Lecturer on Medical Ophthalmoscopy in the University of Pennsylvania, etc. With two hundred and sixteen illustrations and two chromo-lithographic plates. Pp. 641. Philadelphia: W. B. Saunders. 1892.

WHEN this book came to our attention we said, Surely the assertion of the wise man of old, Solomon, is right—"Of making many books there is no end." In the past five years we have had as many volumes on this well-worn subject, with but little new matter. It is too much the practice for teachers in medical schools to write books for no other reason than that the students of their school or college will read them.

We have here not only the experience of Dr. de Schweinitz, in the parts relating to the diseases of the eye, but the experience and style of Dr. James Wallace, of the University Hospital, in those relating to the optical principles, refraction, and the like; and the aid of Dr. Edward Jackson on the subject of retinoscopy—for what reason does not appear.

The volume contains twenty-two chapters, a bibliography, and an index.

Chapter I., by James Wallace, M.D., treats of "General Optical Principles," and contains fifty-six pages, with the usual illustrations. The question of the *centrad* and *prism-dioptre*, as applied to prisms, is gone into, and a table gives their relative values. We quite agree with the writer that this new method of designating prisms is of value, especially in determining the prismatic deviation of a decentred lens: if a lens

be decentred one centimetre, the prismatic deviation of the lens will be equal to as many prism-dioptres as the number of dioptres in the lens.

Chapter II. is on "External Examinations of the Eye." The treatment of "balance of the external eye muscles" is most clearly and concisely written, and no one can fail to find profit in reading it.

Chapter III., "Reflection, the Ophthalmoscope, and the Theory of Ophthalmoscopy and Retinoscopy," consists of forty-six pages, with the usual illustrations. And, strange to say, the author does not present any particular form of ophthalmoscope which he prefers, and to which he has added some peculiar wheel or cog, as is usually the case in recent books on this subject. We congratulate the writer on his being satisfied with the instruments now at our disposal.

"Ophthalmometry" is mentioned in a few words; we should judge that our Philadelphia brothers are not as enthusiastic over its usefulness as are those of a neighboring city. Retinoscopy is treated of by Dr. Jackson in a very clear and plain manner. We agree with him as to its usefulness and ease of application.

Chapter IV., "Normal and Abnormal Refraction," by James Wallace, M.D., takes fifty pages, but we find nothing new nor any plainer exposition of facts for the student. Dr. Jackson's tables showing the amount of deviation which is produced by decentring a spherical lens are useful, and close the chapter.

In the section on "Diseases of the Conjunctiva," we are sorry to see the terms "chronic," "military," and "toxic ophthalmia," when the word *conjunctivitis* should be used.

Chapter XII., on "Glaucoma," is concise and perfect, giving all methods of treatment to date. We think, however, that many cases of acute glaucoma may be cut short and permanently relieved by sulphate of eserine; the author speaks of it rather as a temporary agent.

The chapters on the diseases of the interior of the globe are all excellent and the teaching sound. Space forbids more extended mention.

Chapter XIX., "Movements of the Eyeballs and Other Anomalies," is one of the best in the volume, and, in point of original matter and illustration, to our mind takes the lead of the previous chapters in practical and lucid demonstration.

We agree with the author that the adoption of the nomenclature of Dr. Stevens is a more convenient manner of describing weakness of muscular action than the old method; this is perfectly consistent, and at the same time does not commit the author to any of Dr. Stevens's theories as to etiology of nervous affections, etc.

Chapter XXII. describes the operations upon the eye and its appendages, in about fifty pages, with numerous illustrations.

The directions as to the preparation of the hands of the operator, the patient, and the instruments will suit the most fastidious believer in antiseptic surgery.

All that is said about the extraction of cataract is good and sound, only we wish the author would express his own views of preference rather than those of another. Partial and graduated tenotomy is mentioned without comment of condemnation or praise. We should have been pleased to have seen it omitted, as we consider the method as described in the text, and as we have seen it performed, unscientific.

Taken as a whole, the volume just closed is a good, sound, and concise record of the facts known to ophthalmic science, given in a plain

manner and without comment: this, to our mind, is the principal fault. Many of the plates are fair, but we must confess to a feeling of disappointment, as in these days of photography certainly better results should be obtained.

The publishers have done their work well, and in conclusion we can wish the volume a large sale and field of usefulness. W. O. M.

THE TREATMENT OF TYPHOID FEVER; AND REPORTS OF FIFTY-FIVE CONSECUTIVE CASES WITH ONLY ONE DEATH. By JAMES BARR, M.D., Physician to the Northern Hospital, Liverpool, etc. With an introduction by W. T. GAIRDNER, Professor of Medicine in the University of Glasgow, etc. 8vo., pp. 212. London: H. K. Lewis. 1892.

THIS book derives interest from a well-written historical sketch of the treatment of the continued fevers from the time of Sydenham, and an account of the author's method of treating typhoid fever. The historical sketch runs in somewhat narrow lines, and chiefly refers to the work done by British physicians. The author's method of treating his severe cases of enteric fever, as carried out in the Northern Hospital of Liverpool, certainly marks a new departure in the management of this disease. It consists in the use of the tank as a means for continuous immersion, as introduced in 1861 by Hebra for the treatment of burns, scalds, psoriasis, and other extensive lesions of the skin.

The author's tank consists of a wooden box, six feet long, two feet ten inches wide, and sixteen inches deep. It is lined with lead, painted, and covered with a thick coat of shellac. It is provided with a large discharge-pipe communicating with a soil-pipe leading down to the sewer. It is capable of holding seventy gallons of water and of being emptied in three minutes. There is hot- and cold-water connection. The patient's body rests upon a sheet of bed-ticking, stretched at a level which enables the patient to be submerged, with a strip about a foot wide for the head, which rests upon an air-pillow, "so as to keep the head above water, which is a most essential matter in most conditions of human life." The patient, wrapped in a blanket, is thus submerged. The tank is covered with a half-lid. The author suggests that the tank might easily be provided with a small circulating boiler to maintain a uniform temperature, but that this is unnecessary, as by the removal of a quantity of water and the addition of hot water at intervals a sufficiently equable temperature may be maintained. A thermometer is kept constantly in the tank. The water is kept at a temperature varying from 90° to 98° F. Further points of treatment are given in sufficient detail. Full notes of twenty-two cases treated by this method are appended. Of these cases one only terminated fatally. The histories of a number of other cases treated by the expectant-symptomatic plan, and general observations on diagnosis and prognosis, make up the body of the book.

The author regards his plan of treating enteric fever by continuous immersion as simply a modification of and an improvement upon the method of treating this disease by systematic cold baths originated by Brand.

In this opinion we cannot concur. The action of the continuous bath is essentially different from that of the cold bath given regularly at intervals of three hours so long as the temperature continues to rise above 102° F.

The stimulus to the respiratory centres, to the circulation, to the skin, produced by the sudden immersion in cold water; the abstraction of heat resulting from the continuous agitation of the water in contact with the surface produced by briskly rubbing the patient's skin during the bath; the favorable influence upon the peripheral circulation brought about by warm blankets and alcohol after the bath, and the rhythmical repetition of these influences, constitute a therapeutic procedure totally differing in every respect from that of continuous immersion. It is to these rhythmical alternations of influences upon the nervous system as well as to its distinct antipyretic working that the beneficial effects of the method of systematic cold bathing are attributed by Brand and his followers.

Dr. Barr's method, ingenious and bold as it is, has been followed by good results in this first series of cases. Should these favorable results continue in larger series in the future he will doubtless be followed elsewhere, with the result of finally determining the value of the plan.

J. C. W.

THE PATHOLOGY AND TREATMENT OF GLAUCOMA. By PRIESTLEY SMITH, Ophthalmic Surgeon and Clinical Lecturer on Diseases of the Eye, Queen's Hospital, Birmingham, etc. London: J. & A. Churchill. 1891.

THIS work of 200 pages is a revised and enlarged edition of the Erasmus Wilson Lectures delivered before the College of Surgeons of England, in March, 1889, which, when first published, established the reputation of the author as an authority on glaucoma. It is a record of numerous painstaking and careful physiological experiments, with their results, as well as a statement of deductions drawn from the examination and analysis of many pathological specimens.

Lecture I. discusses physiology exclusively, and the methods of estimating tension of the eyeball by palpation and by instruments invented for the purpose. Experiments of Mr. Smith and those of other well-known physiologists determine the following important facts: "That the fluids which nourish the vitreous body and the lens and fill the aqueous chamber are secreted chiefly by the ciliary portion of the uveal tract; that the larger portion of the secretion passes directly into the aqueous chamber, forward through the pupil, and out at the filtration angle; a very much smaller portion passes backward through the vitreous body and escapes at the papilla; and that the hyaloid membrane is readily permeable by the vitreous fluid."

Lecture II. considers the causes and conditions of increased intra-ocular tension—among them are hypersecretion, serosity of fluids, and obstruction of the filtration angle. As proof of the last, the author cites as accepted causes of secondary glaucoma, annular posterior synechiae, perforating wounds and ulcers of the cornea, with anterior synechiae, dislocation and swelling of the lens through injuries, operations, and intra-ocular tumors: in all these the angle becomes closed.

Lecture III. considers in detail the predisposing causes of idiopathic or primary glaucoma: 1. The disposition of the lens to increase in size from ten years to seventy, disproportionately to the increase in growth of the ball. Thus "between twenty-five and sixty-five years of age it adds one-third to its weight, one-third to its volume, and one-tenth to its diameters." 2. The liability to glaucoma increases proportionately with the age. This is demonstrated by a series of tables in the appendix. 3. The liability is greatest in small eyes. The author demonstrates this proposition by measurements taken from a moderately large number of healthy and glaucomatous eyes and classified into tables, as well as by photographs of normal and abnormal specimens which had been subjected to similar methods of preparation, and claims that in each of the glaucomatous eyes were found a small globe, a disproportionately large lens, a shallow anterior chamber, a closed filtration angle, an atrophied ciliary body, and an excavated optic nerve.

Among the exciting causes of this form of glaucoma he mentions congestion and inflammation of the uveal tract as caused by exposure, constipation, hunger, sleeplessness, bodily and mental fatigue, mydriatics, etc.

An enumeration of the most common symptoms follows, with a short explanation of the manner of their production. In discussing the treatment, eserine and cocaine in combination are mentioned as an effective means in the "initial" stage "to ward off an attack"—the former to contract the pupil, the latter to contract the vessels of the ciliary body and iris. Sclerotomy he admits to be useful at times, but inferior to the proper operative treatment—iridectomy. His theory of the effectiveness of iridectomy is that the closure of the filtration angle is substituted for the permanent filtration in the neighborhood of the cicatrix, aided immediately after the incision by the escape of the aqueous, relief to circulation by the removal of pressure and simultaneous advance of the lens, escape of blood and draining of fluid from the anterior chamber.

In the appendix are tables of classification of 1000 cases, in relation to age, sex, and measurements of crystalline lenses. The last pages describe the methods of preparing and examining specimens.

It must be remembered by the reader of this work that it is not a monograph or a text-book on the subject of glaucoma, and that it does not pretend to deal exhaustively with the subject. Its theme is limited to a consideration of the pathology and treatment. Notwithstanding that the reviewer has borne this fact constantly in mind, he must confess to a feeling of disappointment. The original investigations, which are described at too great length, seem to have been undertaken with the definite object of proving certain theories which had already found a firm footing in the investigator's mind, and the author has accorded too little space to experiments and results which do not tend to confirm his opinions. He has succeeded in demonstrating, for instance, that closure of the filtration angle, upon which he lays the greatest stress, occurs nearly constantly in glaucoma; but other investigators are not convinced that it is the cause, considering it rather the effect, of the glaucomatous process. On the other hand, while there is nothing new or startling, the material is well arranged and the ideas are clothed with fitting phraseology, and are of sufficient importance to warrant the attention of students of ophthalmic science.

The publisher should be credited with the excellence of the mechanical details and the absence of all typographical errors. H. F. H.